

10442-33US

- 12 -

**WE CLAIM:**

1. A method for recognizing an object in a target image using a model defined by model primitives comprising an additive primitive and a subtractive primitive, said method comprising:  
deriving a target primitive for said object;  
determining associations between said target primitive and said model primitives; and  
computing a similarity score for said target primitive with respect to said model primitives, by increasing said similarity score for each one of said associations between said target primitive and said additive primitive, and by decreasing said similarity score for each association between said target primitive and said subtractive primitive.
2. The method as claimed in claim 1, further comprising assigning a predetermined weight to said additive primitive and to said subtractive primitive.
3. The method as claimed in claim 1, wherein said determining associations comprises matching a neighboring condition between said target primitive and a model primitive of said model primitives.
4. The method as claimed in claim 1, further comprising comparing said similarity score to a threshold criteria to provide a result indicative of a pattern matching between said object and said model primitives.

10442-33US

- 13 -

5. The method as claimed in claim 1, wherein said deriving, said determining and said computing are performed according to a geometric hashing technique, further wherein said determining associations is performed using a hash table comprising said model primitives.
6. The method of claim 1, wherein said deriving, said determining and said computing are performed according to a generalized Hough transform technique, further wherein said determining associations is performed using an R-table comprising said model primitives.
7. The method as claimed in claim 1, further comprising providing a position of said object within said target image, wherein said additive primitive comprises additive model edge elements, said subtractive primitive comprises subtractive model edge elements and said target primitive comprises target edge elements, further wherein said associating comprises satisfying a neighboring condition between said target edge elements and at least one of said additive model edge elements and said subtractive model edge elements.
8. A computer-readable storage medium for storing instructions for execution by a processing unit, said instructions for carrying out a method for recognizing an object in a target image using a model defined by model primitives comprising an additive primitive and a subtractive primitive, said method comprising:

10442-33US

- 14 -

deriving a target primitive for said object;  
determining associations between said target primitive and said model primitives; and  
computing a similarity score for said target primitive with respect to said model primitives, by increasing said similarity score for each one of said associations between said target primitive and said additive primitive, and by decreasing said similarity score for each association between said target primitive and said subtractive primitive.

9. The computer-readable storage medium as claimed in claim 8, further comprising assigning a predetermined weight to said additive primitive and to said subtractive primitive.
10. The computer-readable storage medium as claimed in claim 8, wherein said determining associations comprises matching a neighboring condition between said target primitive and a model primitive of said model primitives.
11. The computer-readable storage medium as claimed in claim 8, further comprising comparing said similarity score to a threshold criteria to provide a result indicative of a pattern matching between said object and said model primitives.
12. The computer-readable storage medium as claimed in claim 8, wherein said deriving, said determining and said computing are performed according to a geometric hashing technique, further wherein said determining

10442-33US

- 15 -

associations is performed using a hash table comprising said model primitives.

13. The computer-readable storage medium of claim 8, wherein said deriving, said determining and said computing are performed according to a generalized Hough transform technique, further wherein said determining associations is performed using an r-table comprising said model primitives.
14. The computer-readable storage medium as claimed in claim 8, further comprising providing a position of said object within said target image, wherein said additive primitive comprises additive model edge elements, said subtractive primitive comprises subtractive model edge elements and said target primitive comprises target edge elements, further wherein said associating comprises satisfying a neighboring condition between said target edge elements and at least one of said additive model edge elements and said subtractive model edge elements.